

WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS

PATENT OF THE UNITED STATES IS:

1. An image-forming apparatus supervising system with a plurality of data communication apparatuses connected with at least one image-forming apparatus which contains usage information and a central control apparatus connected with said plurality of data communication apparatus via a communication line, said system configured to supervise said at least one image-forming apparatus via the communication line and the plurality of data communication apparatus, said system comprising:

a usage information transmitting device configured to transmit said usage information periodically from said at least one image-forming apparatus to the central control apparatus;

an apparatus list generating device configured to generate an apparatus list indicating which of the at least one image-forming apparatuses and plurality of data communication apparatuses having said usage information;

a first obtaining operation executing device configured to execute a first obtaining operation for obtaining said usage information from said at least one image-forming apparatus, said usage information transmitted through the plurality of data communication apparatuses after the apparatus list is generated;

a confirming device configured to confirm which of the plurality of data communication apparatuses and the at least one image-forming apparatus have not-yet-obtained usage information, by comparing, after the first obtaining operation is executed, a list of the image-forming apparatuses which transmitted with the apparatus list;

a not-yet-obtained list generating device configured to generate a not-yet-obtained list indicating which of the plurality of data communication and the at least one image-forming apparatus have said not-yet-obtained usage information; and

~~a second obtaining operation executing device configure to execute a second~~

obtaining operation for obtaining said usage information from the at least one image-forming apparatus and the plurality of data communication apparatuses with said not-yet-obtained usage information by accessing the at least one image-forming apparatus and the plurality of data communication apparatuses based on the not-yet-obtained list generated by the not-yet-obtained list generating device.

2. An image forming apparatus supervising system according to claim 1, wherein said usage information transmitting device is provided in the data communication apparatus.

3. An image forming apparatus supervising system according to claim 1, wherein said apparatus list generating device is provided in the central control apparatus.

4. An image forming apparatus supervising system according to claim 1, wherein said usage information includes a total number of image formed sheets.

5. An image forming apparatus supervising system according to claim 1, wherein said first obtaining operation executing device is provided in the central control apparatus.

6. An image forming apparatus supervising system according to claim 1, wherein said confirming device is provided in the central control apparatus.

7. An image forming apparatus supervising system according to claim 1, wherein said not-yet-obtained list generating device is provided in the central control apparatus.

~~8. An image forming apparatus supervising system according to claim 1, wherein said second obtaining operation executing device is provided in the central control apparatus.~~

9. An image forming apparatus supervising system according to claim 1, wherein said usage information transmitting device transmits said usage information by generating a self-call and when the data communication apparatus is accessed by the central control apparatus.

10. An image forming apparatus supervising system according to claim 1, wherein said usage information transmitting device transmits at a predetermined time and information of said predetermined time is stored in the central control apparatus.

11. An image forming apparatus supervising system according to claim 1, wherein said confirming device includes a not-yet-obtained usage information second confirming device configured to compare, after execution of the second obtaining operation, the list of image-forming apparatuses which transmitted with the not-yet-obtained list and confirm which data communication and image-forming apparatuses have said not-yet-obtained usage information, said not-yet-obtained usage information list generating device including a not-yet-obtained information list regenerating device configured to regenerate the not-yet-obtaining information list indicating which data communication and image-forming apparatuses have said not-yet-obtained usage information, and

wherein said second obtaining operation executing device executes another second obtaining operation after a predetermined time has elapsed if, after execution of the second obtaining operation, ~~at least one data communication or image-forming apparatus with said~~

~~-not yet obtained usage information is confirmed.~~

12. An image-forming apparatus supervising system according to claim 11, wherein,
said central control apparatus includes a usage information obtaining-impossible-list
generating device configured to generate a usage information obtaining-impossible-list
5 indicating that at least one data communication or image-forming apparatus has said not-yet-
obtained usage information even though a predetermined number times of the second
obtaining operations have been executed by the second obtaining operation executing device.

13. An image forming apparatus supervising system according to claim 12, wherein a
display of the central control apparatus displays information of said obtaining-impossible-list.

10 14. An image-forming apparatus supervising system according to claim 12, wherein
the central control apparatus transmits obtaining-impossible-list to at least one of a sales
person and a service person in charge of the image-forming apparatus having said not-yet-
obtained usage information.

15 15. An image-forming apparatus supervising system according to claims 1 or 11,
further comprising:

a bill-submitting-device configured to submit a bill based on a difference in usage
information obtained between a preceding and current number of image-formed sheets.

16. An image-forming apparatus supervising system according to claim 15, wherein
said bill submitting device does not submit the bill if the difference is abnormal.

~~17. An image-forming apparatus supervising system according to claim 16, wherein
said abnormal difference includes a case when a usage value obtained is a prescribed number
of times of an average value.~~

~~18. An image-forming apparatus supervising system with a plurality of data
communication apparatuses connected with at least one image-forming apparatus which
contains usage information and a central control apparatus connected with said plurality of
data communication apparatus via a communication line, said system configured to supervise
said at least one image-forming apparatus via the communication line and the plurality of
data communication apparatus, said system comprising:~~

~~means for transmitting said usage information periodically from said at least one
image-forming apparatus to the central control apparatus;~~

~~means for generating an apparatus list indicating which of the at least one image-
forming apparatuses and plurality of data communication apparatuses contain usage
information to be transmitted in a predetermined day;~~

~~15 a first means for obtaining said usage information from said at least one image-
forming apparatus, said usage information transmitted through the plurality of data
communication apparatuses after the apparatus list is generated;~~

~~means for confirming which of the plurality of data communication apparatuses and
the at least one image-forming apparatus have not-yet-obtained usage information,~~

~~20 confirmation occurs by comparing, after the first obtaining operation is executed, a list of the
image-forming apparatuses which transmitted with the apparatus list;~~

~~means for generating a not-yet-obtained list indicating which of the plurality of data
communication and the at least one image-forming apparatus have said not-yet-obtained~~

usage information; and

a second means for obtaining said usage information from the at least one image-forming apparatus and the plurality of data communication apparatuses with said not-yet-obtained usage information by accessing the at least one image-forming apparatus and the plurality of data communication apparatuses based on the not yet obtained list generated by the not-yet-obtained list generating device.

19. An image forming apparatus supervising system according to claim 18, wherein
said means for transmitting usage information is provided in the data communication
apparatus.

10 20. An image forming apparatus supervising system according to claim 18, wherein
said means for generating an apparatus list is provided in the central control apparatus.

21. An image forming apparatus supervising system according to claim 18, wherein
said means for transmitting usage information transmits a total number of image formed
sheets.

15 22. An image forming apparatus supervising system according to claim 18, wherein
said first means for obtaining said usage information is provided in the central control
apparatus.

23. An image forming apparatus supervising system according to claim 18, wherein
said means for confirming is provided in the central control apparatus.

24. An image forming apparatus supervising system according to claim 18, wherein
said means for generating a not-yet-obtained list is provided in the central control apparatus.

25. An image forming apparatus supervising system according to claim 18, wherein
said second means for obtaining said usage information is provided in the central control
5 apparatus.

26. An image forming apparatus supervising system according to claim 18, wherein
said means for transmitting usage information transmits said usage information by generating
a self-call and when the data communication apparatus is accessed by the central control
apparatus.

10 27. An image forming apparatus supervising system according to claim 18, wherein
said means for transmitting usage information transmits at a predetermined time and
information of said predetermined time is stored in the central control apparatus. .

15 28. An image forming apparatus supervising system according to claim 18, wherein
said means for confirming includes means for generating a not-yet-obtained usage
information list by comparing , after execution of the second obtaining operation, the list of
image-forming apparatuses which transmitted with the not-yet-obtained list and confirming
which data communication and image-forming apparatuses have said not-yet-obtained usage
information, said means for generating a not-yet-obtained usage information list including a
means for regenerating the not-yet-obtaining usage information list indicating which data
20 communication and image-forming apparatuses have said not-yet-obtained usage

information, and

wherein said second means for obtaining said usage information executes another second obtaining operation after a predetermined time has elapsed if, after execution of the second obtaining operation, at least one data communication or image-forming apparatus with said not-yet-obtained usage information is confirmed.

29. An image-forming apparatus supervising system according to claim 28, wherein said central control apparatus includes means for generating a usage information obtaining-impossible-list indicating that at least one data communication or image-forming apparatus has said not-yet-obtained usage information even though a predetermined number times of the second obtaining operations have been executed by the second means for obtaining usage information.

30. An image forming apparatus supervising system according to claim 29, wherein a display of the central control apparatus displays information of said obtaining-impossible-list.

31. An image-forming apparatus supervising system according to claim 29, wherein the central control apparatus transmits obtaining-impossible-list to at least one of a sales person and a service person in charge of the image-forming apparatus having said not-yet-obtained usage information.

32. An image-forming apparatus supervising system according to claims 18 or 28,
20 further comprising:

~~means for billing based on a difference in usage information obtained between a preceding and current number of image-formed sheets.~~

33. An image-forming apparatus supervising system according to claim 32, wherein said means for billing does not submit the bill if the difference is abnormal.

34. An image-forming apparatus supervising system according to claim 33, wherein said abnormal difference includes a case when a usage value obtained is a prescribed number of times of an average value.

35. A method for supervising a system of image-forming apparatuses with a plurality of data communication apparatuses connected with at least one image-forming apparatus which contains usage information and a central control apparatus connected with said plurality of data communication apparatus via a communication line, said system configured to supervise said at least one image-forming apparatus via the communication line and the plurality of data communication apparatus, comprising the steps of:

periodically transmitting said usage information from said at least one image-forming apparatus to the central control apparatus;

generating an apparatus list indicating which of the at least one image-forming apparatuses and plurality of data communication apparatuses contain usage information to be transmitted in a predetermined day;

obtaining said usage information from said at least one image-forming apparatus, said usage information transmitted through the plurality of data communication apparatuses after the apparatus list is generated;

confirming which of the plurality of data communication apparatuses and the at least one image-forming apparatus have not-yet-obtained usage information, by comparing, after the first obtaining operation is executed, a list of the image-forming apparatuses which transmitted with the apparatus list;

5 generating a not-yet-obtained list indicating which of the plurality of data communication and the at least one image-forming apparatus have said not-yet-obtained usage information; and

10 re-obtaining said usage information from the at least one image-forming apparatus and the plurality of data communication apparatuses with said not-yet-obtained usage information by accessing the at least one image-forming apparatus and the plurality of data communication apparatuses based on the not yet obtained list generated by the not-yet-obtained list generating device.

36. A method according to claim 35, wherein the step of transmitting said usage information is provided in the data communication apparatus.

15 37. A method according to claim 35, wherein the step of generating an apparatus list is provided in the central control apparatus.

38. A method according to claim 35, wherein the step of transmitting said usage information transmits a total number of image formed sheets.

20 39. A method according to claim 35, wherein said step of obtaining said usage information is provided in the central control apparatus.

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40. A method according to claim 35, wherein said step of confirming is provided in the central control apparatus.

41. A method according to claim 35, wherein said step of generating a not-yet-obtained list is provided in the central control apparatus.

42. A method according to claim 35, wherein said step of re-obtaining said usage information is provided in the central control apparatus.

43. A method according to claim 35, wherein said step of transmitting said usage information occurs by generating a self-call and when the data communication apparatus is accessed by the central control apparatus.

44. A method according to claim 35, wherein said step of transmitting said usage information occurs at a predetermined time and information of said predetermined time is stored in the central control apparatus .

45. A method according to claim 35, wherein said step of confirming further comprises the steps of:

generating a not-yet-obtained usage information list by comparing, after the re-obtaining step, the list of image-forming apparatuses which transmitted with the not-yet-obtained list and confirming which data communication and image-forming apparatuses have said not-yet-obtained usage information, said step of generating the not-yet-obtained usage information list including regenerating the not-yet-obtaining usage information list

indicating which data communication and image-forming apparatuses have not-yet-obtained usage information, and

wherein said step of re-obtaining said usage information occurs again after a predetermined time has elapsed if, after execution of the second obtaining operation, at least one data communication or image-forming apparatus with said not-yet-obtained usage information is confirmed.

46. A method according to claim 45, further comprising the step of:

generating a usage information obtaining-impossible-list indicating that at least one data communication or image-forming apparatus has said not-yet-obtained usage information even though a predetermined number times of the second obtaining operations have been executed.

47. A method according to claim 46, further comprising the step of:

displaying said obtaining-impossible-list on a display of the central control apparatus.

48. A method according to claim 46, further comprising the step of:

sending said obtaining-impossible-list to at least one of a sales person and a service person in charge of the image-forming apparatus having said not-yet-obtained usage information.

49. A method according to claims 35 or 45, further comprising the step of:

billing based on a difference in usage information obtained between a preceding and current number of image-formed sheets.

50. A method according to claim 49, wherein said step of billing does not submit the bill if the difference is abnormal.

51. A method according to claim 50, wherein said step of billing does not submit the bill if the abnormal difference is a usage value which is a prescribed number of times of an average value.